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Saturated fatty acids induce development of both metabolic syndrome and osteoarthritis in rats

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Supplementary Table 1: Cardiovascular function in C, H, HLA, HMA, HPA and HSA rats

Variable	C	HLA	HMA	HPA	HSA	H
Heart weight (<i>mg/mm</i>)	21.8 ± 2.5 ^b	16.2 ± 1.5 ^c	23.7 ± 2.2 ^{ab}	25.9 ± 4.1 ^a	22.3 ± 2.3 ^b	25.3 ± 3.0 ^a
LV + septum wet weight (<i>mg/mm</i>)	18.2 ± 2.3 ^a	13.0 ± 1.2 ^b	19.3 ± 1.7 ^a	20.1 ± 3.1 ^a	18.2 ± 2.1 ^a	20.0 ± 2.7 ^a
RV wet weight (<i>mg/mm</i>)	3.61 ± 0.90 ^{cd}	3.11 ± 0.38 ^d	4.38 ± 0.79 ^{bc}	5.78 ± 1.36 ^a	4.08 ± 0.39 ^{bc}	4.72 ± 0.76 ^b
LVIDd (<i>mm</i>)	7.36 ± 0.61 ^b	6.52 ± 0.52 ^c	7.55 ± 0.73 ^b	7.93 ± 0.51 ^{ab}	7.86 ± 0.56 ^{ab}	8.33 ± 0.46 ^a
LVPWd (<i>mm</i>)	1.65 ± 0.25 ^{ab}	1.55 ± 0.13 ^b	1.71 ± 0.11 ^{ab}	1.83 ± 0.11 ^a	1.72 ± 0.18 ^{ab}	1.79 ± 0.16 ^a
Relative wall thickness	0.46 ± 0.10 ^a	0.49 ± 0.06 ^a	0.46 ± 0.04 ^a	0.47 ± 0.04 ^a	0.45 ± 0.06 ^a	0.43 ± 0.05 ^a
Fractional shortening (%)	53.2 ± 10.5 ^a	50.5 ± 15.4 ^a	50.4 ± 9.4 ^a	42.6 ± 7.5 ^a	41.9 ± 6.2 ^a	43.0 ± 5.2 ^a
Heart rate (<i>bpm</i>)	343 ± 95 ^a	296 ± 78 ^a	360 ± 48 ^a	329 ± 81 ^a	310 ± 74 ^a	323 ± 54 ^a
Stroke volume (μ L)	375 ± 96 ^b	246 ± 47 ^c	391 ± 92 ^b	420 ± 72 ^{ab}	412 ± 99 ^{ab}	493 ± 77 ^a
Cardiac output (μ L)	133.5 ± 61.1 ^a	71.3 ± 18.1 ^b	139.1 ± 32.8 ^a	137.2 ± 38.1 ^a	125.1 ± 34.7 ^a	159.9 ± 40.3 ^a
Diastolic stiffness constant (κ)	22.0 ± 1.4 ^c	21.8 ± 2.9 ^c	25.3 ± 2.2 ^b	26.6 ± 2.2 ^{ab}	27.1 ± 1.3 ^{ab}	28.2 ± 1.5 ^a
Estimated LV mass, Litwin (<i>g</i>)	0.83 ± 0.08 ^{cd}	0.67 ± 0.08 ^d	0.89 ± 0.16 ^{bc}	1.03 ± 0.11 ^{ab}	0.96 ± 0.11 ^{ab}	1.06 ± 0.13 ^a
Systolic wall stress (<i>mmHg.cm⁻¹</i>)	75.8 ± 28.7 ^b	101.7 ± 58.2 ^{ab}	95.0 ± 35.8 ^{ab}	127.9 ± 35.3 ^a	137.8 ± 26.6 ^a	131.7 ± 28.6 ^a
LV developed pressure (<i>mmHg</i>)	69.7 ± 22.3 ^a	74.0 ± 29.6 ^a	53.1 ± 16.9 ^a	84.4 ± 31.0 ^a	78.1 ± 27.0 ^a	66.6 ± 30.5 ^a
Ascending aorta flow (<i>cm/sec</i>)	98.6 ± 19.1 ^a	83.4 ± 21.4 ^a	96.3 ± 12.4 ^a	97.8 ± 11.0 ^a	98.9 ± 8.6 ^a	97.4 ± 14.6 ^a
Descending aorta flow (<i>cm/sec</i>)	87.3 ± 17.2 ^a	81.4 ± 12.8 ^a	95.1 ± 9.1 ^a	97.0 ± 18.6 ^a	95.0 ± 18.8 ^a	96.2 ± 18.4 ^a
Ejection time (<i>msec</i>)	78.2 ± 8.1 ^b	94.9 ± 9.0 ^a	80.4 ± 9.1 ^b	84.0 ± 7.5 ^b	85.6 ± 12.2 ^{ab}	87.0 ± 7.2 ^{ab}

Supplementary table 1 Legend: Measurement of cardiovascular function in rats fed the different diets (n=10). All values are represented as mean ± SD. Mean values within a row with unlike superscript letters are significantly different (P < 0.05) with a>b>c>d.

Abbreviations: C – corn starch diet-fed rats; H – high-carbohydrate, high-fat diet-fed rats; HLA – high-carbohydrate, high-lauric acid-fed rats; HMA – high-carbohydrate, high-myristic acid-fed rats; HPA – high-carbohydrate, high-palmitic acid-fed rats; HSA – high-carbohydrate, high-stearic acid-fed rats; LV – left ventricle; RV – right ventricle; LVIDd – left ventricular internal diameter during diastole; LVPWd – left ventricular posterior wall thickness during diastole.

Supplementary Table 2: Osteocyte morphology in C, H, HLA, HMA, HPA and HSA rats

Variables	C	HLA	HMA	HPA	HSA	H
Avg OS.L/mm²	67.5±17.08	65.5±21.60	70.5±17.08	122.5±21.60 ^a	182.5±18.93 ^a	162.5±19.15 ^a
Avg OS.N/mm²	712.5±50.58	660.0±63.77	525.0±42.03 ^a	460.0±35.59 ^a	420.0±29.44 ^a	512.5±34.03 ^a
Total Osteocyte Lacunae/mm²	787.5±37.75	727.5±50.58	597.5±65.51 ^a	585.0±58.02 ^a	587.5±56.79 ^a	657.5±59.09 ^a

Supplementary table 2 Legend: Diverse distribution of osteocytes in the subchondral bone region of the rats fed the different diets (n=8). The rats fed with H, PA and SA had increased Avg OS.L and decreased Avg OS.N compared to other diet groups. Values with superscript letter (a) are significantly different (P<.05). All values are represented as mean ± SD.